

CLAIMS

It is claimed:

- 1 1. A device comprising:
2 a reflector;
3 a first dielectric layer disposed over the reflector; and
4 a thin film resistor formed over the first dielectric layer.
- 1 2. The device of claim 1, wherein said reflector comprises a refractory metal.
- 1 3. The device of claim 2, wherein said refractory metal comprises tungsten
2 (W), molybdenum (Mo), tantalum (Ta), Rhenium (Re), and/or Niobium (Nb).
- 1 4. The device of claim 1, wherein said reflector substantially reflects a laser
2 energy used to laser trimming said thin film resistor.
- 1 5. The device of claim 1, wherein the thickness of said first dielectric layer is
2 at a pre-determined thickness range which optimizes the laser trimming of said thin film
3 resistor.
- 1 6. The device of claim 1, wherein said first dielectric layer comprises silicon
2 dioxide (SiO₂) and/or silicon nitride (Si₃N₄).
- 1 7. The device of claim 1, wherein said thin film resistor comprises chromium
2 silicon (CrSi), nickel chromium (NiCr), and/or tantalum nitride (TaN).
- 1 8. The device of claim 1, further comprising a second dielectric layer disposed
2 over the thin film resistor.
- 1 9. The device of claim 8, wherein the thickness of said second dielectric layer
2 is at a pre-determined thickness range which optimizes the laser trimming of said thin film
3 resistor.

1 10. The device of claim 9, wherein said second dielectric layer comprises
2 silicon dioxide (SiO₂) and/or silicon nitride (Si₃N₄).

1 11. The device of claim 1, further comprising a metal-insulator-metal (MIM)
2 capacitor.

1 12. The device of claim 11, wherein a plate of said MIM capacitor is at a same
2 layer as that of said reflector.

1 13. The device of claim 12, wherein said plate comprises an upper plate of said
2 MIM capacitor.

1 14. A method comprising:
2 forming a reflector;
3 forming a first dielectric layer over said reflector; and
4 forming a thin film resistor over said first dielectric layer.

1 15. The method of claim 14, wherein forming said reflector comprises:
2 forming a reflective layer;
3 forming a mask layer over said reflective layer;
4 patterning and developing said mask layer to form a mask; and
5 etching said reflective layer except a portion underlying said mask, wherein said
6 portion of said reflective layer comprises said reflector.

1 16. The method of claim 15, wherein said reflective layer comprises a
2 refractory metal.

1 17. The method of claim 16, wherein said refractory metal comprises tungsten
2 (W), molybdenum (Mo), tantalum (Ta), Rhenium (Re), and/or Niobium (Nb).

1 18. The method of claim 14, further comprising directing a laser energy to trim
2 said thin film resistor, wherein said reflector substantially reflects said laser energy
3 towards said thin film resistor.

1 19. The method of claim 18, wherein the thickness of said first dielectric layer
2 is at a pre-determined thickness range which optimizes the laser trimming of said thin film
3 resistor.

1 20. The method of claim 14, wherein said first dielectric layer comprises silicon
2 dioxide (SiO_2) and/or silicon nitride (Si_3N_4).

1 21. The method of claim 14, wherein forming said thin film resistor comprises:
2 forming a thin film resistive layer over said first dielectric layer;
3 forming a mask layer over said thin film resistive layer;
4 patterning and developing said mask layer to form a mask; and
5 etching said thin film resistive layer except a portion under said mask, wherein said
6 portion comprises said thin film resistor.

1 22. The method of claim 21, wherein said thin film resistive layer comprises
2 chromium silicon (CrSi), nickel chromium (NiCr), and/or tantalum nitride (TaN).

1 23. The method of claim 14, further comprising forming a second dielectric
2 layer over said thin film resistor.

1 24. The method of claim 23, further comprising directing a laser energy to said
2 thin film resistor, wherein the thickness of said second dielectric layer is at a pre-
3 determined range which optimizes the laser trimming of said thin film resistor.

1 25. The method of claim 23, wherein said second dielectric layer comprises
2 silicon dioxide (SiO_2) and/or silicon nitride (Si_3N_4).

1 26. The method of claim 14, further comprising forming a metal-insulator-
2 metal (MIM) capacitor.

1 27. The method of claim 26, wherein forming said MIM capacitor comprises:
2 forming a first capacitor plate;
3 forming a second capacitor plate; and
4 forming an insulating layer between said first and second capacitor plates.

1 28. The method of claim 27, wherein forming said second capacitor plate
2 comprises:
3 forming an electrically-conductive layer;
4 forming a mask layer over said electrically-conductive layer;
5 patterning and developing said mask layer to form first and second masks; and
6 etching said electrically-conductive layer except first and second portions thereof
7 which respectively underlie said first and second masks, wherein said first portion
8 comprises said second capacitor plate and said second portion comprises said reflector.

1 29. The method of claim 28, wherein said second capacitor plate comprises an
2 upper capacitor plate of said MIM capacitor.